

## **PIXE analysis of trace elements in cosmic dust and manganese nodule**

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### **Abstract**

Chemical compositions of spherule samples separated from deep sea sediment dredged off Hawaii island were measured by instrumental neutron activation analysis (INAA) using Kyoto University Reactor (KUR). From their chemical compositions, the origin of spherules was judged to be extraterrestrial or not. Additionally, the formation mechanism of the extraterrestrial spherules was investigated on the basis of their chemical compositions. In this work, PIXE analysis of trace elements in spherule samples was attempted to propose the criteria for judging the origin of spherules and to discuss formation mechanism of them in further detail.

Micro manganese nodule samples which were able to be obtained from deep sea sediment were preliminarily analyzed by PIXE. Based on the PIXE results and the contents of cosmogenic nuclides in those nodule samples, it is suggested that formation mechanism and growth rate of those nodule samples can be investigated.